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U.S. Department of the Interior • U.S. Geological Survey

# MINERAL INDUSTRY SURVEYS

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## IRON ORE IN MARCH 1997

U.S. mine production of iron ore in March 1997 was 9.1% higher than that of February 1997, according to the U.S. Geological Survey. Shipments increased by 119.5% and mine stocks increased by 27.3%. Consumption and trade data for March 1997 will be included in a subsequent report

### HBI Joint Venture Projects in Venezuela

Two HBI joint venture projects are planned for Venezuela. Known as Comsigua and Posven, both involve CVG Ferrominera del Orinoco CA (FMO), the Venezuelan iron ore producer, and will be built at Punta Cuchillo in the Puerto Ordaz area. Construction has begun on the Complejo Siderurgica de Guayana, S.A. (Comsigua) project, a joint venture whose primary equity partners are Kobe Steel Ltd., Japan, FMO, and the International Finance Corp.

Hanbo Steel, South Korea, until it was bankrupted, held a major equity position in this venture. The plant will use Midrex direct reduction technology and will have a 1 million metric ton per year (Mt/yr) module. Construction began in January 1997, and the plant is expected to begin production in June 1998. FMO will supply pellets and lump ore for the plant (Metal Bulletin, 1997a).

On January 20, 1997, Pohang Iron & Steel Co. Ltd. (Posco), South Korea, signed a joint-venture agreement for the construction of a hot briquetted iron (HBI) plant in Venezuela, with an annual production capacity of 1.5 million metric tons (Mt). The joint venture company, Posven C.A., is 75% owned by Korean companies as follows: Posco, 60%; Dongbu Steel, 10%; and Hyundai Corp., 5%. The remaining 25% of Posven is held by interests that include local iron ore supplier Ferrominera Orinoco, HYLSA, S.A., de C.V. (HYLSA) of Mexico, and Raytheon of the U.S., which will construct the plant along with Posco's engineering arm Posec. Construction of the plant, to be built near Guayana City in southeast

Venezuela, is expected to start in May 1997, and to be completed in the first half of 1999.

Posco selected HYL, the Iron & Steel Technology and Services Division of HYLSA, to provide the direct reduction technology for the plant, which will consist of two HYL III modules, each with a capacity of 750,000 metric tons per year (t/yr). The plant will use iron ore pellets supplied by FMO. When the plant becomes operational, it will supply 1.05 Mt of HBI to POSCO annually. This HBI will be used as the main raw material for the No. 2 Mini Mill at the Kwangyang Works, which is scheduled to be completed in 1999. Much of the balance will be exported. The Posven project will use the last available supply of iron ore pellets in Venezuela's iron mining region (American Metal Market, 1997; Metal Bulletin, 1997b; Posco Bulletin, 1996; Tex Report, 1997).

### Savage River Mine Closes

Effective December 18, 1996, Cleveland-Cliffs Inc. closed the Savage River Mine in Tasmania, Australia, as the result of depletion of reserves. The mine had been active for 30 years and, at the time of closure, consisted of an open pit mine and concentrator at Savage River and a pellet plant and loading dock at Port Latta. When the project began, in October, 1967, it had the world's first slurry pipeline for heavy minerals, which transported magnetite concentrate 85 km (53 miles). The ownership initially consisted of Australian, Japanese and U.S. companies and management was by Pickands Mather & Co. International, Sydney. Cliffs assumed total ownership of the mine in 1990 and saved it from closure (Skillings Mining Review, 1997).

### References Cited

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Web at URL [http://www.posco.co.kr/report/bulletin96\\_4/item 2.html](http://www.posco.co.kr/report/bulletin96_4/item 2.html))  
Skillings Mining Review, 1997, Savage River Mines completes 30-years of activity with Dec. 18 closure: Skillings Mining Review, v. 86, no.11, March 15, 1997, p. 7.  
Tex Report, 1997, Comsigua I to start production of DRI-HBI in June 1998: Tex Report, v. 29, no. 6803, March 26, 1997, p. 10.

TABLE 1  
U.S. PRODUCTION AND SHIPMENTS OF IRON ORE, BY DISTRICTS 1/  
(Exclusive of ore containing 5% or more manganese)

(Thousand metric tons)

Period	Lake Superior		Other U.S.		Total 2/	
	Monthly	Year to date	Monthly	Year to date	Monthly	Year to date
Production:						
1996:						
March	4,801	13,250	23	83	4,824	13,333
April	4,668	17,918	22	105	4,690	18,023
May	5,479	23,397	20	125	5,500	23,522
June	5,128	28,525	22	147	5,150	28,673
July	5,771	34,296	22	169	5,793	34,465
August	5,752	40,048	119	288	5,871	40,336
September	5,590	45,638	25	313	5,615	45,952
October	5,347	50,985	26	339	5,373	51,325
November	5,503	56,488	24	363	5,527	56,852
December	5,260	61,748	20	383	5,280	62,132
1997:						
January	4,773	4,773	16	16	4,788	4,788
February	4,719	9,492	25	40	4,744	9,532
March	5,149	14,641	27	67	5,176	14,708
Shipments:						
1996:						
March	2,357	7,035	25	58	2,382	7,094
April	5,290	12,325	20	78	5,310	12,404
May	6,317	18,642 r/	21	99	6,338	18,741
June	5,925	24,567 r/	17	116	5,942	24,684
July	6,396	30,963 r/	29	145	6,424	31,108
August	6,230	37,193 r/	29	174	6,259	37,367
September	6,341	43,534 r/	29	203	6,370	43,737
October	6,232	49,766 r/	23	226	6,256	49,993
November	5,674	55,440 r/	31	257	5,705	55,698
December	6,036	61,476 r/	19	276	6,055	61,753
1997:						
January	2,693	2,693	16	16	2,708	2,708
February	1,036	3,729	27	43	1,063	3,771
March	2,310	6,038	23	65	2,333	6,104

r/ Revised.

1/ Excludes byproduct ore.

2/ Data may not add to totals shown because of independent rounding.

TABLE 2  
U.S. PRODUCTION, SHIPMENTS AND STOCKS OF IRON ORE IN MARCH 1/  
(Exclusive of ore containing 5% or more manganese)

(Thousand metric tons)

District	Production		Shipments 2/		Stocks 3/	
	1997	1996	1997	1996	1997	1996 r/
Lake Superior:						
Michigan	1,303	1,124	557	477	4,214	2,899
Minnesota	3,846	3,677	1,753	1,880	8,933	7,611
Other U.S.	27	23	23	25	108	129
Total 4/	5,176	4,824	2,333	2,382	13,255	10,639

r/ Revised.

1/ Excludes byproduct ore.

2/ Includes rail and vessel.

3/ Includes mines, plants, and loading docks.

4/ Data may not add to totals shown because of independent rounding.

TABLE 3  
CANADA: SHIPMENTS OF IRON ORE

(Thousand dry metric tons)

Period	Newfoundland	Quebec	Ontario	British Columbia	Total 1/
1996:					
March	444	743	49	6	1,241
April	2,075	741	36	8	2,859
May	1,343	1,927	45	9	3,325
June	1,653	405	43	7	2,108
July	1,358	995	38	8	2,398
August	2,132	867	40	6	3,045
September	2,755	906	58	8	3,726
October	2,400	1,551	114	9	4,074
November	2,620	1,165	111	8	3,905
December	2,056	1,145	111	8	3,320
Year total	19,959	12,059	733	88	32,839
1997:					
January	924	639 r/	114	8	1,685 r/
February	568	1,045	100	11	1,723
March	NA	NA	NA	NA	NA

r/ Revised. NA Not available.

1/ Data may not add to totals shown because of independent rounding.

Source: Natural Resources Canada.

TABLE 4  
CONSUMPTION AND STOCKS OF IRON ORE AND AGGLOMERATES AND  
BLAST FURNACE PRODUCTION OF HOT METAL AT U.S. IRON AND STEEL PLANTS

(Thousand metric tons)

Consumption of ores and agglomerates				
Consumption by source	February		Year to date	
	1997	1996	1997	1996
United States ores	4,508	4,585	9,297	9,508
Canadian ores	605	660	1,117	1,373
Foreign ores	543	612	1,110	1,248
Total 1/	5,655	5,856	11,522	12,129
Consumption by process				
Blast furnaces	5,074	5,273	10,350	10,902
Steel furnaces	10	6	18	11
Agglomerating plants 2/	565	577	1,125	1,216
Miscellaneous 3/	6	--	28	--
Total 1/	5,655	5,856	11,522	12,129
Stocks of ores and agglomerates				
Storage point	February 28			
	1997	1996		
Furnace yards	13,192	11,110		
Receiving/transfer docks	1,658	1,671		
Total consumer	14,851	12,782		
Blast furnace production of hot metal				
	February		Year to date	
	1997	1996	1997	1996
Hot metal and pig iron produced in blast furnaces	3,849	4,061	7,875	8,425
No. of blast furnaces operating on the last day of the month	37	40	XX	XX

XX Not applicable.

1/ Data may not add to totals shown because of independent rounding.

2/ Iron ore and iron ore concentrates consumed in agglomerating plants not located at the mine site.

3/ Sold to nonreporting companies or used for purposes not listed.

Sources: American Iron Ore Association (consumption of iron ore) and American Iron and Steel Institute (production of hot metal and pig iron).

TABLE 5  
U.S. EXPORTS OF IRON ORE AND AGGLOMERATES, BY COUNTRY  
OF DESTINATION AND TYPE

(Thousand metric tons)

Country of destination and type	1996			1997	
	3rd Quarter	4th Quarter	December	January	February
Canada	2,391	1,729	689	196	109
Mexico	2	1	1	(1/)	(1/)
Other	2	1	(1/)	(1/)	1
Total 2/	2,394	1,731	689	196	110
Pellets	2,380	1,723	688	196	108
Other	14	8	1	(1/)	2
Total 2/	2,394	1,731	689	196	110

1/ Less than 1/2 unit.

2/ Data may not add to totals shown because of independent rounding.

Source: Bureau of the Census.

TABLE 6  
U.S. IMPORTS FOR CONSUMPTION OF IRON ORE AND AGGLOMERATES,  
BY COUNTRY AND TYPE  
(Exclusive of ore containing 20% or more manganese)

Country of origin and type of product	February 1997		Year to date 1997			Year to date 1996 (thousand metric tons)
	Thousand metric tons	Value 1/ (thousand dollars)	Thousand metric tons	Value 1/ (thousand dollars)	Value 1/ (dollars per ton)	
Australia	67	474	134	1,477	11.02	124
Brazil	478	12,000	836	20,835	24.92	516
Canada	185	6,517	595	20,791	34.94	584
Chile	--	--	12	175	14.58	--
Finland	4	183	4	183	45.75	3
Mauritania	--	--	--	--	--	74
Mexico	1	23	4	62	15.50	(2/)
Peru	--	--	44	446	10.14	43
South Africa	--	--	4	389	97.25	--
Venezuela	188	6,819	325	11,847	36.45	471
Total 3/	924	26,015	1,956	56,205	28.73 4/	1,815
Concentrates	(2/)	3	(2/)	3	41.07	(2/)
Coarse ores	68	2,698	209	8,115	38.83	256
Fine ores	314	4,841	640	11,103	17.35	516
Pellets	512	17,441	1,032	35,466	34.37	1,017
Briquettes	--	--	--	--	--	--
Other agglomerates	25	850	71	1,334	18.79	23
Roasted pyrites	4	183	4	184	46.00	3
Total 3/	924	26,015	1,956	56,205	28.73 4/	1,815

1/ Customs value. Excludes international freight, insurance, and other c.i.f. charges.

2/ Less than 1/2 unit.

3/ Data may not add to totals shown because of independent rounding.

4/ Weighted average calculated from unrounded data by dividing total value by total tonnage.

Source: Bureau of the Census.

TABLE 7  
U.S. IMPORTS FOR CONSUMPTION OF IRON ORE AND AGGLOMERATES IN FEBRUARY 1997  
(Exclusive of ore containing 20% or more manganese)

(Thousand metric tons)

Country of origin	Type of product						Total 1/
	Concentrates	Coarse ores	Fine ores	Pellets	Briquettes and other agglomerates	Roasted pyrites	
Australia	--	--	67	--	--	--	67
Brazil	--	--	247	207	24	--	478
Canada	(2/)	--	--	185	--	--	185
Finland	--	--	--	--	--	4	4
Mexico	--	--	--	--	1	--	1
Venezuela	--	68	--	120	--	--	188
Total 1/	(2/)	68	314	512	25	4	924

1/ Data may not add to totals shown because of independent rounding.

2/ Less than 1/2 unit.

Source: Bureau of the Census.

TABLE 8  
U.S. IMPORTS FOR CONSUMPTION OF PELLETS, BY COUNTRY

Country of origin	February 1997		Year to date 1997			Year to date 1996 (thousand metric tons)
	Thousand metric tons	Value 1/ (thousand dollars)	Thousand metric tons	Value 1/ (thousand dollars)	Value 1/ (dollars per ton)	
Brazil	207	6,806	317	10,557	33.30	218
Canada	185	6,513	595	20,788	34.94	584
Venezuela	120	4,121	120	4,121	34.34	214
Total 2/	512	17,441	1,032	35,466	34.37 3/	1,017

1/ Customs value. Excludes international freight, insurance, and other c.i.f. charges.

2/ Data may not add to totals shown because of independent rounding.

3/ Weighted average calculated from unrounded data by dividing total value by total tonnage.

Source: Bureau of the Census.

TABLE 9  
U.S. IMPORTS FOR CONSUMPTION OF IRON ORE AND  
AGGLOMERATES, BY CUSTOMS DISTRICT  
(Exclusive of ore containing 20% or more manganese)

(Thousand metric tons)

Customs district	February	Year to date	
	1997	1997	1996
Baltimore, MD (13)	309	689	645
Charleston, SC (16)	24	89	46
Chicago, IL (39)	--	--	49
Detroit, MI (38)	(1/)	(1/)	(1/)
Duluth, MN (36)	--	--	51
Los Angeles, CA (27)	--	--	(1/)
Mobile, AL (19)	370	654	556
New Orleans, LA (20)	216	421	250
Nogales, AZ (26)	1	4	(1/)
Philadelphia, PA (11)	4	100	218
Portland, ME (01)	--	--	(1/)
Total 2/	924	1,956	1,815

1/ Less than 1/2 unit.

2/ Data may not add to totals shown because of independent rounding.

Source: Bureau of the Census.

TABLE 10  
U.S. IMPORTS FOR CONSUMPTION OF PELLETS, BY CUSTOMS DISTRICT

(Thousand metric tons)

Customs district	February	Year to date	
	1997	1997	1996
Baltimore, MD (13)	67	206	242
Charleston, SC (16)	--	65	23
Chicago, IL (39)	--	--	49
Duluth, MN (36)	--	--	51
Mobile, AL (19)	301	545	300
New Orleans, LA (20)	144	216	137
Philadelphia, PA (11)	--	--	214
Total 1/	512	1,032	1,017

1/ Data may not add to totals shown because of independent rounding.

Source: Bureau of the Census.